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REFRIGERATING APPARATUS

Filed Feb. 28, 1927

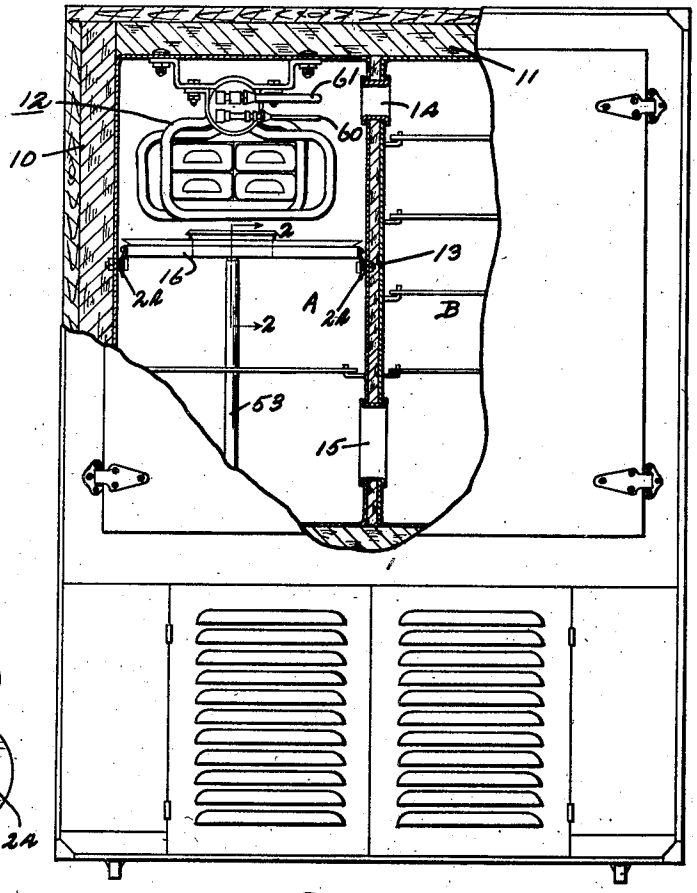


Fig. 1.

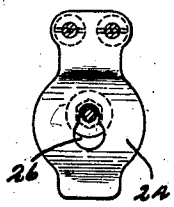


Fig. 3.

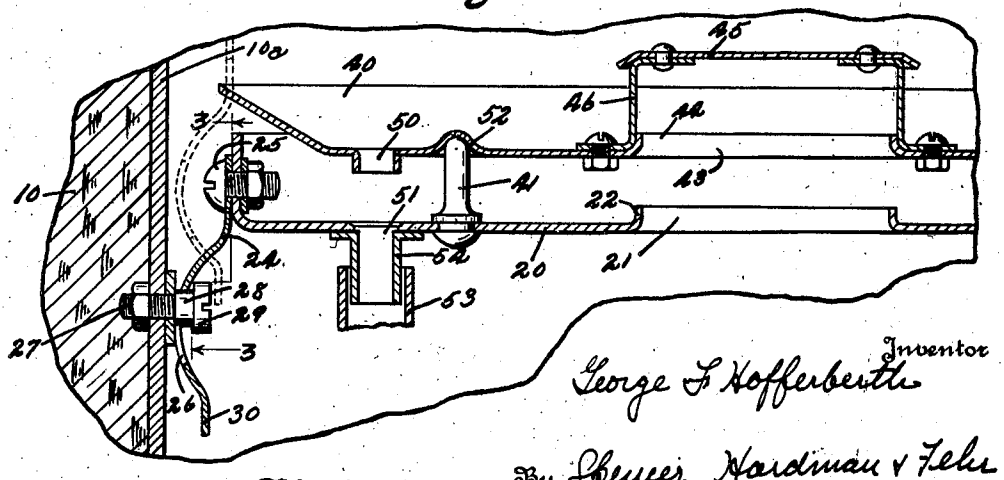


Fig. 2.

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UNITED STATES PATENT OFFICE

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REFRIGERATING APPARATUS

Application filed February 28, 1927. Serial No. 171,437.

The present invention relates to refrigerating cabinets, one of its objects being to so construct portions of the cabinet that they may be easily assembled when the cabinet is installed and easily removed for cleaning and repairs or replacements. More specifically it is an object of the invention to provide a partition for a cabinet which is readily removable and yet which is securely fastened in place for shipment.

Another object is to provide a partition between the refrigerating compartment and storage compartment which is economical to manufacture and which is sufficiently insulated to prevent condensation of moisture in the storage compartment.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of embodiment of the invention is clearly shown.

In the drawings:

Fig. 1 is a front view partly in section and partly in elevation of a cabinet constructed in accordance with the invention,

Fig. 2 is fragmentary section on an enlarged scale, taken on the line 2—2 of Fig. 1, and

Fig. 3 is an elevation of a catch, the view being taken on the line 3—3 of Fig. 2.

Referring to the drawings, the cabinet comprises side walls 10 and a top wall 11 from which is supported a cooling unit 12 of any suitable form, for example such as is more fully described in the application of Harold B. Wallis, Serial No. 164,712, filed January 31, 1927. Preferably the interior of the cabinet is divided into two compartments A and B by a wall or vertical partition 13 having openings 14 and 15 for the circulation of air. Compartment B is a food storage compartment while compartment A is divided into another food storage compartment and a refrigerating compartment by the horizontal partition 16.

In accordance with the present invention I make the partition 16 removable and preferably construct it as follows. The main body of the partition is of sheet metal formed into shape of a pan 20, shown in Fig. 2 and has an opening 21 at its center to permit the passage of air through it, the opening being surrounded by a vertical edge or wall 22 which prevents any moisture which should happen to be condensed or otherwise deposited on the upper surface of the partition from flowing through the opening into the food compartment. In order to support the partition I provide three or more spring clips 24 of the form shown best in Figs. 2 and 3 which are secured to the edges of the partition by any suitable means, such as bolts 25, and project downwardly. Each of the clips is bowed outwardly toward the wall of the cabinet with which it is designed to co-operate and is provided substantially at its center with a key-hole slot 26 adapted to cooperate with a pin 27 suitably attached to the metal lining 10^a of the walls. Preferably each of these pins has a shank portion 28 and an enlarged head portion 29, the diameter of the shank portion permitting it to slide into the narrow portion of the key-hole slot and the head portion being just small enough to be passed through the large portions of the key-hole slot. Each of the spring clips has a bias toward the wall so that its neutral position is approximately as shown in Fig. 2. The lower ends 30 of the clips are spaced away from the walls enough to permit insertion of the finger behind the clip to move it away from the wall and permit its removal from the pin.

To put the partition in place it is first inserted in the cabinet in horizontal position with the clips 24 slightly above pins 27. The ends 30, one or more at a time are held away from the walls, and the partition lowered until the ends 30 of the clips clear the heads of the pins, as shown by dotted lines of Fig. 2. The key-hole slots can then be snapped over the heads of the pins and further downward movement of the partition will bring the narrow portion of the key-hole slot behind the head and prevent accidental removal of the partition. In the full line position shown in Fig. 2, the narrow portions of the slots prevent the clips

from being moved inwardly so as to be disengaged from the pins. In order to remove the partition it is necessary both to lift the shelf and then move the clips inwardly to clear the heads of the pins. Thus accidental overturning of the cabinet in shipment cannot disengage the partition.

If a metal partition 20 alone were placed close to the cooling unit 12, or if moisture which drips from the cooling unit during defrosting were allowed to collect on the partition 20 the latter would become so cold as to cause objectionable condensation of moisture on its underside; that is, in the food compartment. In order to prevent this a drip pan 40 is supported above partition 20 by any suitable means, such as pegs 41 having low thermal conducting capacity and secured at one end to either the pan or the partition. At their other ends the pegs cooperate with depressions 52 in the other member (pan or partition) in order to maintain it in register with the first member.

The drip pan 40 has an opening 43 which registers with the opening 21 in the partition 20 to permit the passage of air, and like the partition 20 has an upturned edge or wall 44 which prevents water collected in the pan from flowing through the opening.

In order to prevent water dripping thru openings 43 and 21 I provide a shield or baffle 45 which is attached to the pan by any suitable means, such as two or more spacers 46 of sufficient length to permit the free passage of air through the opening. The baffle extends over the wall 44 in order to deflect dripping water to the outside of the wall.

In order to remove water collected in the pan I provide a discharge orifice 50 in the pan and a registering discharge orifice 51 in the partition 20. A spout 54 is preferably secured to the under side of the partition 20 and is adapted to be inserted in a drain pipe 53 when the partition is in place. The pegs 41 and depression 42 previously mentioned serve to keep the orifice in alignment and prevent water collecting on the partition 20. The air space between the drip pan and the partition provides sufficient insulation to prevent condensation of moisture on the partition.

Liquid refrigerant is supplied through the cooling unit through pipe 60 and gaseous refrigerant is pumped off through a pipe 61 by a compressor, not shown, and refrigeration is produced in the cooling compartment in the well-known manner. Cold air descends from the cooling compartment through the openings 43 and 21 to the storage compartment A and warm air enters cooling compartment through the opening 14 from the storage compartment B. This sets up a continuous circulation of air through the three compartments through openings 14 and 15.

The above construction affords several advantages in assemblage and operation. It is desirable to be able to remove the partition 20 to enable the cooling unit 12 to be attached or removed. It is also desirable to have the partition readily removable for the purpose of cleaning both the partition and walls of the compartment. At the same time the partition is so secured to the walls that it can be shipped in place if desired without any danger of its rattling loose during transportation by accidental overturning of the cabinet or otherwise.

While the form of embodiment of the present invention as herein disclosed, constitutes a preferred form it is to be understood that other forms might be adopted all coming within the scope of the claims which follow.

What is claimed is as follows:

1. Refrigeration apparatus comprising a cabinet having walls, pins projecting from the walls, a removable partition, and resilient catches attached to the partition and engaging the pins to secure the partition to the walls.

2. Refrigeration apparatus comprising a cabinet having walls, pins projecting from the walls, a removable partition and resilient catches attached to the partition and engaging the pins to secure the partition to the walls, said catches being biased toward the walls and adapted to be disengaged from the pins only when moved away from the walls.

3. Refrigeration apparatus comprising a cabinet having walls, pins projecting from the walls, a removable partition and resilient catches attached to the partition and engaging the pins to secure the partition to the walls, said catches being biased toward the walls and adapted to be disengaged from the pins only when the partition is moved along the walls.

4. Refrigeration apparatus comprising a cabinet having walls, pins projecting from the walls, a removable partition, and resilient catches attached to the partition and engaging the pins to secure the partition to the walls, said catches being biased toward the walls and adapted to be disengaged from the pins only when moved away from the walls and adapted to be moved away from the walls only when the partition is moved bodily along the walls.

5. Refrigerating apparatus comprising a cabinet having walls, pins projecting from the walls, each pin having a shank portion and a relatively larger head portion, a removable partition, resilient catches attached to the partition for supporting it on the pins, each of said catches being biased toward the wall and having a key-hole slot, the larger portion of the slot enabling the catch

to be passed over the head of a pin and the smaller portion being adapted to prevent the catch from being passed over the head of a pin.

6. Refrigerating apparatus comprising a cabinet adapted to support a cooling unit, a horizontal partition below the cooling unit dividing the cabinet into a cooling compartment and a storage compartment, a drip pan supported on the partition by means having low thermal conducting capacity, said means being so arranged as to provide an insulating air space between the pan and the partition.

7. Refrigerating apparatus comprising a cabinet adapted to support a cooling unit, and a horizontal partition below the cooling unit dividing the cabinet into a cooling compartment and a storage compartment, said partition including a pair of spaced substantially parallel plates each having an opening, one of said plates having pegs of low thermal conducting capacity secured thereto and projecting vertically therefrom and the other of said plates having depressions to receive the ends of the pegs to maintain the openings in register.

8. A refrigerating apparatus comprising a cabinet adapted to support a cooling unit, a horizontal partition below the cooling unit dividing the cabinet into a cooling compartment and a storage compartment, a removable drip pan supported on the partition by means having low thermal conducting capacity, said means being so arranged as to provide an air space between the pan and partition, the pan and partition having registering openings to form an air passage therethrough, and means on the pan for preventing liquid from passing through said passage.

9. A refrigerating apparatus comprising a cabinet adapted to support a cooling unit, a horizontal partition below the cooling unit dividing the cabinet into a cooling compartment and a storage compartment, a removable drip pan supported on the partition by means having low thermal conducting capacity, said means being so arranged as to provide an air space between the pan and partition, the pan and partition having registering openings to form an air passage, means for preventing liquid from dropping through said passage, the pan having a liquid discharge orifice and the partition also having a liquid discharge orifice registering therewith, and means on the partition for directing liquid to a drain.

10. Refrigerating apparatus comprising a cabinet having walls, a partition including a pair of plates separated by an air space and dividing the cabinet into a cooling compartment and a storage compartment, and resilient means for securing the partition to the walls.

11. Refrigerating apparatus comprising a cabinet having wall means, and a partition means including a pair of plates separated by an air space and dividing the cabinet into a cooling compartment and a storage compartment, one of said means having a shoulder, and the other means having a resilient fastening means cooperating with the shoulder to removably secure the partition means to the wall means.

12. Refrigerating apparatus comprising a cabinet, a horizontal partition dividing the cabinet into a cooling compartment and a storage compartment, said partition including a wall and a drip pan supported on and at a distance from the wall by means having low thermal conducting capacity, pins projecting from the cabinet, and resilient catches on the wall engaging the pins to secure the partition to the cabinet.

13. Refrigerating apparatus comprising a cabinet, a horizontal partition dividing the cabinet into a cooling compartment and a storage compartment, said partition including a pair of spaced substantially parallel plates each having an opening, one of said plates having pegs of low thermal conducting capacity secured thereto and projecting vertically therefrom and the other of said plates having depressions to receive the ends of the pegs to maintain the openings in register, pins projecting from the cabinet, and resilient catches attached to the partition and engaging the pins for removably securing the partition to the cabinet.

In testimony whereof I hereto affix my signature.

GEORGE F. HOFFERBERTH.